

Remarks

I. Support for Amendments

Support for the foregoing amendments to the claims can be found throughout the specification. Specifically, support for the amendments to claims 100-102, and for new claims 118 and 119, can be found in the specification at pages 44-45; and support for new claims 120-127 can be found in the specification at pages at pages 11, 12, 15-16, 29 and 38-44, and in claims 34 and 52 as originally filed. Accordingly, these amendments to the claims do not add new matter to the application, and their entry and consideration are respectfully requested.

II. Status of the Claims

By the foregoing amendments, claims 26, 28-35, 52 and 89-99 have been cancelled without prejudice or disclaimer, claims 100-102 have been amended, and new claims 118-127 are sought to be entered. These amendments do not introduce new matter into the application. Upon entry of the foregoing amendments, claims 100-127 are pending in the application, with claims 100-102, 118 and 119 being the independent claims.

III. Summary of the Office Action

In the Office Action dated October 30, 2001, the Examiner has objected to the amendment filed on July 25, 2001, and has made four rejections of the claims. Applicants respectfully offer the following remarks to overcome or traverse each of these rejections.

IV. The Objection to the Amendment Is Traversed

In the Office Action at pages 2-3, the Examiner has objected to the amendment filed on July 25, 2001, under 35 U.S.C. § 132 for allegedly introducing new matter into the disclosure. Applicants respectfully traverse this objection.

In making this objection, the Examiner contends that the phrase “enhance recombination specificity” is allegedly not supported in the specification as filed. Applicants respectfully disagree. As indicated in Applicants’ amendment filed on July 25, 2001, the phrase “enhance recombination specificity” is fully supported in the specification at page 23, lines 14-19, pages 41-44, and in the examples. The Examiner discounts this support, stating that:

[I]t is not clear if “products” refers to the protein/polypeptide produced as a result of expression of nucleic acids that have undergone site-specific recombination mediated by a recombinase or to the nucleic acids. In any event, “enhancing production of products” is not the equivalent of “enhancing specificity of recombination.”

Paper No. 25 at page 2, third full paragraph, lines 3-7. Applicants respectfully disagree. As one of ordinary skill would readily understand, the term “products” as used in the specification passages referred to above clearly refers to nucleic acid molecules produced as a result of site-specific recombination. Although it is certainly the case that such nucleic acid molecules could be transcribed and translated into proteins, it is clear from the context in which the term “products” is used in these portions of the specification that the “products” are nucleic acid molecules produced by the recombination reactions. Hence, “enhancing production of products” clearly *is* the equivalent of “enhancing specificity of recombination,” particularly in view of the clear guidance regarding specificity of recombination provided in the specification at page 43, line 5, to page 44, line 8.

Accordingly, Applicants respectfully assert that the new matter objection is in error and should be withdrawn.

V. The Rejections Under 35 U.S.C. § 103 are Rendered Moot

In the Office Action at pages 5-7, the Examiner has rejected claims 26, 28-35, 52, 98 and 99 under 35 U.S.C. § 103(a) as being unpatentable over Bebee (U.S. Patent No. 5,434,066) in view of Schlake *et al.* (*Biochemistry* 33:12746-12751 (1994)). In the Office Action at pages 7-9, the Examiner has rejected claims 26, 28-35 and 52 under 35 U.S.C. § 103(a) as being unpatentable over Shuman (U.S. Patent No. 5,766,891) in view of Schlake *et al.* Applicants respectfully traverse both of these rejections, and respectfully assert that the claims would not have been obvious over the cited references.

However, solely to advance prosecution and not in acquiescence to these rejections, claims 26, 28-35, 52, 98 and 99 have been cancelled by the foregoing amendments. Thus, the rejections under 35 U.S.C. § 103(a) have been rendered moot.

VI. The Rejection Under 35 U.S.C. § 112, First Paragraph, is Rendered Moot

In the Office Action at pages 9-10, the Examiner has rejected claims 26, 28-35, 52 and 89-99 under 35 U.S.C. § 112, first paragraph, for alleged lack of written description. Applicants respectfully traverse this rejection.

However, solely to advance prosecution and not in acquiescence to this rejection, claims 26, 28-35, 52 and 89-99 have been cancelled by the foregoing amendments. Thus, the rejection under 35 U.S.C. § 112, first paragraph, has been rendered moot.

VII. The Rejection Under 35 U.S.C. § 112, Second Paragraph, is Rendered Moot

In the Office Action at page 10, the Examiner has rejected claims 26, 28-35, 52 and 89-99 under 35 U.S.C. § 112, second paragraph, for alleged indefiniteness. Applicants respectfully traverse this rejection.

However, solely to advance prosecution and not in acquiescence to this rejection, claims 26, 28-35, 52 and 89-99 have been cancelled by the foregoing amendments. Thus, the rejection under 35 U.S.C. § 112, second paragraph, has been rendered moot.

VIII. Other Matters

Applicants acknowledge with gratitude the Examiner's allowance of claims 100-117 in the present matter, in Paper No. 26.

IX. Conclusion

All of the stated grounds of objection and rejection have been properly traversed, accommodated or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and that they be withdrawn.

Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this amendment and remarks, and allowance of all pending claims, are earnestly solicited.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.

A handwritten signature in black ink, appearing to read "Brian J. Del Buono", with a large, sweeping flourish at the end.

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Version with markings to show changes made

In the Claims:

(a) Claims 26, 28-35, 52 and 89-99 have been cancelled without prejudice or disclaimer.

(b) Claims 100-102 are sought to be amended as follows:

100. (Once amended) A method for synthesizing a double stranded nucleic acid molecule comprising:

- (a) mixing one or more nucleic acid templates with a polypeptide having polymerase activity and one or more primers comprising at least a first recombination site or portions thereof;
- (b) incubating said mixture under conditions sufficient to synthesize a first nucleic acid molecule which is complementary to all or a portion of said one or more templates and which comprises at least said first recombination site or portions thereof; and
- (c) incubating said first nucleic acid molecule in the presence of one or more primers comprising at least a second recombination site or portions thereof under conditions sufficient to synthesize a second nucleic acid molecule complementary to all or a portion to said first nucleic acid molecule, thereby producing a double stranded nucleic acid molecule comprising at least said first and second recombination sites or portions thereof,

wherein at least one of said first and second recombination sites comprises one or more mutations that remove one or more stop codons from said recombination sites.

101. (Once amended) A method for synthesizing a double stranded nucleic acid molecule comprising:

- (a) mixing one or more nucleic acid templates with a polypeptide having polymerase activity and one or more primers comprising at least a first recombination site or portions thereof;
- (b) incubating said mixture under conditions sufficient to synthesize a first nucleic acid molecule which is complementary to all or a portion of said one or more templates and which comprises at least said first recombination site or portions thereof; and
- (c) incubating said first nucleic acid molecule in the presence of one or more primers comprising at least a second recombination site or portions thereof under conditions sufficient to synthesize a second nucleic acid molecule complementary to all or a portion to said first nucleic acid molecule, thereby producing a double stranded nucleic acid molecule comprising at least said first and second recombination sites or portions thereof,

wherein at least one of said first and second recombination sites comprises one or more mutations that avoids hairpin formation in said recombination sites.

102. (Once amended) A method for synthesizing a double stranded nucleic acid molecule comprising:

- (a) mixing one or more nucleic acid templates with a polypeptide having polymerase activity and one or more primers comprising at least a first recombination site or portions thereof;
- (b) incubating said mixture under conditions sufficient to synthesize a first nucleic acid molecule which is complementary to all or a portion of said one or more templates and which comprises at least said first recombination site or portions thereof; and
- (c) incubating said first nucleic acid molecule in the presence of one or more primers comprising at least a second recombination site or portions thereof under conditions sufficient to synthesize a second nucleic acid molecule complementary to all or a portion to said first nucleic acid

molecule, thereby producing a double stranded nucleic acid molecule comprising at least said first and second recombination sites or portions thereof,

wherein at least one of said first and second recombination sites comprises at least one nucleic acid sequence selected from the group consisting of SEQ ID NOs: 1-16 or a DNA sequence complementary thereto.

(c) New claims 118-127 are sought to be entered.